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ASSIGNMENT BOOKLET

MAT1038 Applied Mathematics 10
Module 6

FOR STUDENT USE ONLY

Date Assignment Submitted: ______________________

Time Spent on Assignment: ______________________

(If label is missing or incorrect)

Student File Number: ______________________

Module Number: ____________

FOR OFFICE USE ONLY

Assigned Teacher: ______________

Assignment Grading: ______________

Graded by: ______________

Date Assignment Received:

Student's Questions and Comments

Apply Module Label Here

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Please verify that preprinted label is for correct course and module.

Teacher's Comments

____
Teacher

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- Are all the assignments completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

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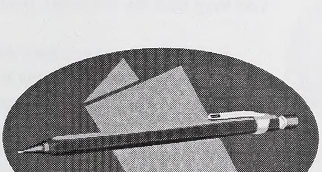
Applied Mathematics 10

Module 6

Trigonometry

PROJECT BOOKLET



Learning
Technologies
Branch

Alberta
LEARNING

FOR TEACHER'S USE ONLY

Summary

Total Possible Marks	Your Mark
40	

Teacher's Comments

Applied Mathematics 10
Module 6: Trigonometry
Project Booklet
Learning Technologies Branch
ISBN 0-7741-2169-6

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	

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- Learning Technologies Branch, **http://www.learning.gov.ab.ca/ltb**
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ASSIGNMENT BOOKLET
APPLIED MATHEMATICS 10 – MODULE 6: TRIGONOMETRY

Your mark on this module will be determined by how well you do on the assignment in this Assignment Booklet and the module project in the Project Booklet.

The value of each part of the module assignment is stated in the left margin of this booklet. The total value of the module assignment is 60 marks.

(60)

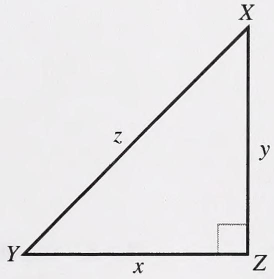
Module Assignment

Read all parts of this booklet carefully and record your answers in the appropriate places. Work slowly and carefully. If you are having difficulties, go back and review the appropriate activity in the Student Module Booklet.

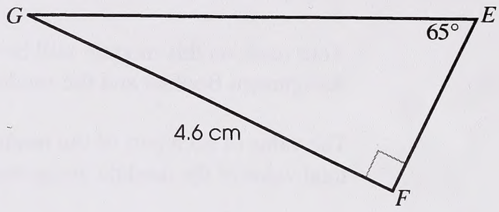
Be sure to complete all parts of the assignment and proofread your responses before you submit this assignment to your teacher for grading.

③

1. Write the sine, cosine, and tangent ratios for $\angle X$ based on the following diagram.



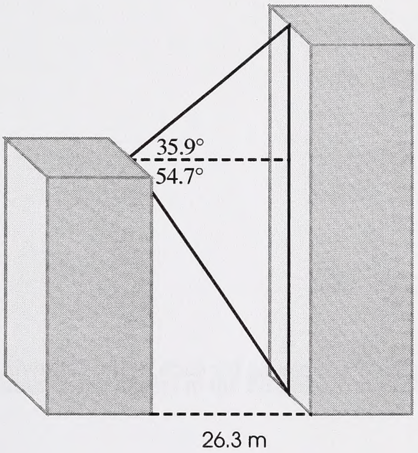
③ **2.** In $\triangle EFG$, determine EF, EG, and $\angle G$. Round lengths to the nearest tenth of a centimetre.



① **3.** **a.** Explain how to measure, using the clinometer that you made in this module, the angle of elevation (or the angle of depression) from you to an object.

① **b.** Explain how to measure, using the transit that you made in this module, the horizontal angle between you and two objects.

⑥ **4.** Two buildings are 26.3 m apart. From the top of the shorter building, the angle of elevation to the top of the taller building is 35.9° and the angle of depression to the base of the taller building is 54.7°. What is the height of the taller building? Express your answer to the nearest tenth of a metre.



③ **5.** Two fires are burning on opposite sides of a fire tower that is 90 m high. The fire ranger observes one fire to have an angle of depression of 3° and the other to have an angle of depression of 5°. Which fire is farther away? Explain how you know. Do **not** do any calculations. Assume the fires are about the same size and that the region between the fires is level.

6. Give the sine and cosine for each of the following angles.

② **a.** 23°

② **b.** 137°

② **c.** 86°

7. Complete the following equations with the equivalent supplementary angle.

① **a.** sin 42° =

① **b.** cos 74° =

① **c.** sin 156° =

① **d.** cos 121° =

② **8.** State the Sine Law in words.

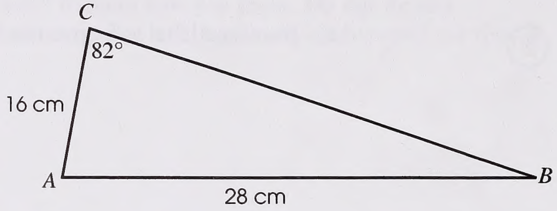
9. An airplane is coming in to land on a runway that is 2250 m in length. The angle of depression is 11° to the near end of the runway and 9° to the far end.

② **a.** Draw and label a diagram to illustrate this situation.

③ **b.** Determine the measures of the angles in the diagram you drew in question 9.a.

③ **c.** How far is the airplane from the far end of the runway? Round the answer to the nearest metre.

③ **10.** Calculate the measure of $\angle B$ in the given triangle. Round the answer to the nearest degree.



11. Two cabins, *A* and *B*, are located 430 m apart on the same side of a lake. A lifeguard tower, *C*, is located on the opposite side of the lake. The angle between the lines of sight from *A* to *B* and from *A* to *C* is 72°. The angle between the lines of sight from *B* to *A* and from *B* to *C* is 77°.

② **a.** Draw and label a diagram to illustrate the problem.

③ **b.** Determine the distance from cabin A to the lifeguard tower. Round the answer to the nearest metre.

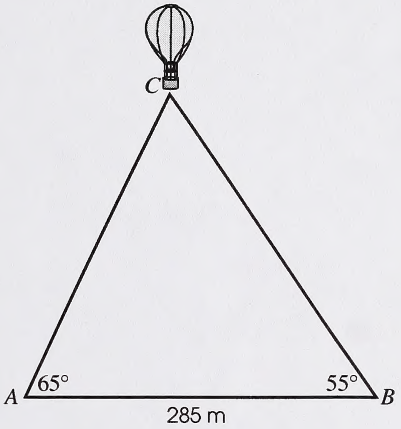
③ **12.** A golfer consistently drives a golf ball 190 m. If she hits her ball down a fairway that is 83 m wide, what is the maximum angle between a drive to the left and a drive to the right that would still be on the fairway?

⑥

13. Andrea, Fred, and Gurtek leave a dock and sail 10 km at a bearing of 090° to a fishing spot. After fishing for a while, they sail on a bearing of 210° to another spot 6 km away. The boat travels at 15 km/h. If the time is now 3:30 P.M., how long can they continue to fish at this location if they must return to the dock before dark at 6:30 P.M.? Calculate your answer to the nearest minute.

⑥

14. Two friends observe a hot-air balloon directly in line between them. Sara determines the angle of elevation to be 65° and Suki measures the angle of elevation to be 55°. The girls mark their spots and then measure the distance between the markers. They determine this distance to be 285 m. Determine the height of the balloon to the nearest metre from a point directly below.



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